Interim Science, Technology and Telecommunication Committee-8/8/14
Fred Mondragon, Former Cabinet Secretary, Economic Development
"Centers of Research Excellence and Technology Commercialization"

I. History

- Centers of Technical Excellence funded in early 80's -$35 M from the State
- Oversight provided by Governor's Science and Technology Advisory Committee
- Consisted of 5 Centers at three research Universities
- Two Centers (CHTM, CETR) were exceptional, one became the MIND Institute
- The keys to success of the Centers were: 1. Hiring a world class chief scientist, 2. Industrial alliances, and 3. Frequent monitoring by independent oversight.

II. Center for High technology Materials (CHTM)-Created at UNM for applied research in optoelectronics, microelectronics and nanotechnology

- State funding-$9.7M; grants and contracts received-$190M, Almost 20 times State funds invested
- Advanced degrees awarded for work at CHTM; MS- 226 and PhD- 195
- Annual contract revenue--$8 M from government and industry
- 48 professional and administrative staff and over 80 students annually
- 146 patents issued, 40% licensed, significant license and royalty income
- 14 companies spun off through technology transfer, many other companies assisted by CHTM
- Future growth possible by collaboration with the Center for Integrated Nanotechnology(CINT), and future, more intense, collaboration with Sandia requires $5-10M investment for research equipment
- **Important new opportunity; The Department of Defense has issued a procurement challenge to University/Industry consortiums for the creation of Institutes for Manufacturing Innovation (IMI). UNM, through**

CHTM has an opportunity to participate in, or possibly lead, an effort to base a Photonics Manufacturing Technology Institute at UNM. The DOD will provide grants of $15M per year for 5 years to the awardees.

III. Center for Energetic Technology Research (CETR)-Created at NM Tech to promote economic development through research in explosive materials

- State investment was $5 M, current revenue is $50 M annually
- Return on state funds over $500 M in the last 20 years, a 100 times return
- 200-300 contracts per year DOD, DOE, DHS, NSF and private industry for research/services
- Approximately 200 persons are employed, most of them in Socorro
- Responsible for world class Mechanical Engineering Program -a critical feeder for LANL, SNL
- Contemplates approximately $2-5 M investment to expand offerings in explosives research

IV. Potential New Centers for Research Excellence and Tech Commercialization

- **Space Commercialization, Astronomy and Astrophysics** - Capitalize on Spaceport, Air Force Space Research, WSMR, WSTF, and assets at VLA, Magdalena Ridge, Apache Ridge, Sloan Sky Survey. Aerospace programs at NMSU, UNM, Tech; Cosmiac Nanosatellite program at UNM
- **Energy and Water Centers**-NM's dependence on fossil fuels and water as its economic lifelines calls for water and energy research centers in these fields by our Universities. Use of brackish water and re-use of produced water, and renewable energy research also provide potential for job-creating technology. All three Research Universities and the Labs are heavily involved in relevant research
- **Cybersecurity/asset protection**-Capitalizing on NM Tech Research, UNM Engineering and ASM programs, Sandia, Los Alamos, NSF CyberCorp Grant.FBI Regional Forensics Lab,WCX, private contractors are building blocks.